

CLIFF CUDWEED AT SPECIFIC RANK IN
PSEUDOGNAPHALIUM (ASTERACEAE: GNAPHALIEAE)

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ABSTRACT

Gnaphalium saxicola is treated at specific rank as ***Pseudognaphalium saxicola*** (Fassett) H.E. Ballard & Feller, comb. nov. It is likely an evolutionary derivative of *Pseudognaphalium obtusifolium* but is consistently different in a number of morphological characters. No intermediates between *P. saxicola* and any other taxon have been observed.

RESUMEN

Gnaphalium saxicola se trata a nivel específico como ***Pseudognaphalium saxicola*** (Fassett) H.E. Ballard & Feller, comb. nov. Es aparentemente un derivado evolutivo de *Pseudognaphalium obtusifolium* pero es bastante diferente en un número de caracteres morfológicos. No se han observado intermedios entre *P. saxicola* y cualquier otro taxon.

The "Cliff Cudweed," *Gnaphalium saxicola* Fassett, is endemic to a relatively small area of Wisconsin. It was initially described as a distinct species but subsequently reduced in rank to a variety of *Pseudognaphalium* (*Gnaphalium*) *obtusifolium* (L.) Hilliard & Burt. Cronquist (1946, p. 121) noted that "At least until a larger series of specimens demonstrates its morphological and genetic discontinuity, it seems better treated as a variety of *G. obtusifolium*." We find that treatment at specific rank most accurately reflects the biological and evolutionary situation and transfer of *G. saxicola* to the genus *Pseudognaphalium* is necessary to reflect newly emerging understanding of natural evolutionary groups in the Gnaphalieae. The new combination will be available for use in the forthcoming "Flora of North America" treatments of Asteraceae.

Pseudognaphalium saxicola (Fassett) H.E. Ballard & Feller, comb. nov. *Gnaphalium saxicola* Fassett, *Rhodora* 33:75. 1931. *Gnaphalium obtusifolium* var. *saxicola* (Fassett) Cronq., *Rhodora* 48:121. 1946. *Pseudognaphalium obtusifolium* var. *saxicola* (Fassett) Kartesz, *Synthesis N. Amer. Fl. Nomencl. Innov.* no. 32. 1999. TYPE: U.S.A. WISCONSIN. ADAMS CO.: Coldwater

Canyon, Dells of the Wisconsin River, sandstone ledges, 22 Sep 1929, N.C. Fassett, F.M. Uhler, and W.T. McLaughlin 9590 (HOLOTYPE: WIS; ISOTYPE: GH).

Plants annual, filiform-taprooted. Stems erect, 4–15(–30) cm tall, filiform, persistently tomentose with a loose, envelope-like, transparent haze of extremely thin hairs, doubling the stem width, eglandular. Leaves cauline, 4–6, elliptic-ob lanceolate to oblanceolate, gradually narrowed to the base, not clasping or decurrent, 5–30 mm, largest at midstem, sessile, green on both surfaces, within veiny reticulum evident, thinly arachnoid-tomentose to glabrate, eglandular. Heads 2–4 in a terminal, capitate cluster, commonly immediately subtended by uppermost cauline leaf, sometimes several clusters in a corymbiform array. Involucres turbinate, 4–5 mm; phyllaries narrowly triangular to narrowly oblong-triangular, acute, in 3(–4) gradate series, whitish to slightly tawny. Pistillate florets 25–28. Bisexual florets 6–7. Cypselae smooth, without raised ridges or papillae.

Flowering (Jul–)Aug–Sep. Mostly bare sandstone cliff faces, ledges, and cracks, S- to E-facing but commonly shaded; 200–300 m; Wisc. (Adams, Columbia, Richland, Sauk, and Vernon cos.).

It seems likely that *Pseudognaphalium saxicola* is an evolutionary derivative of *P. obtusifolium* but it consistently diverges from the latter in many respects. Full details of complementary studies conducted by Ballard and Kowal (1992) and Feller (2000) will be submitted as a combined manuscript for publication but are summarized here in support of the nomenclatural transfer. Phenetic and preliminary greenhouse comparisons of *P. saxicola* with *P. obtusifolium*, *P. helleri* (Britt.) Anderb., and *P. micradenium* (Weatherby) Nesom have distinguished *P. saxicola* by the following: annual duration and absence of a basal rosette; shorter stature (commonly only a few centimeters tall in fruit); loose, partially detaching cobwebby-tomentose pubescence on stems, and complete absence of glands or glandular hairs on stems and leaves; fewer leaf nodes with shorter and broader, thinner and more membranous, essentially glabrous leaves; larger and more open inflorescence; few, small heads with relatively few florets; and more slender, uniformly narrowly acute-tapering, semi-translucent phyllaries. Depauperate individuals of *P. obtusifolium* over its whole geographic range may sometimes be as short as 5–10 cm, approaching the habit of *P. saxicola*; such plants differ from *P. saxicola*, however, in their close and more dense stem vestiture, bicolored and relatively narrow leaves, larger heads with greater number of pistillate florets, and broader phyllaries with rounded apices. No intermediate specimens between *P. saxicola* and any other taxon have been confirmed in hundreds of collections.

Genetic studies of *Pseudognaphalium saxicola* populations using Inter-Simple Sequence Repeats indicate that the taxon is strongly and perhaps obligately apomictic; isolated greenhouse flats set abundant seeds, supporting this hypothesis.

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